CORRECTED VERSION

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 13 October 2005 (13.10.2005)

PCT

(10) International Publication Number WO 2005/094565 A1

(51) International Patent Classification⁷: A01,J 5/017, G06T 7/00

(21) International Application Number:

PCT/SE2005/000427

(22) International Filing Date: 23 March 2005 (23.03.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0400820-7 30 March 2004 (30.03.2004) SE 0400819-9 30 March 2004 (30.03.2004) SE 0400821-5 30 March 2004 (30.03.2004) SE

- (71) Applicant (for all designated States except US): DELAVAL HOLDING AB [SE/SE]; Box 39, S-147 21 Tumba (SE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): PETTERSSON, Maria [SE/SE]; Stockholmsvägen 60B, S-181 42 Lidingö (SE). ANDRÉN DINERF, Johan [SE/SE]; c/o Reiner, Strålgatan 23, S-112 63 Stockholm (SE).
- (74) Agents: FRITZON, Rolf et al.; Kransell & Wennborg KB, Box 27834, S-115 93 Stockholm (SE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- (48) Date of publication of this corrected version:

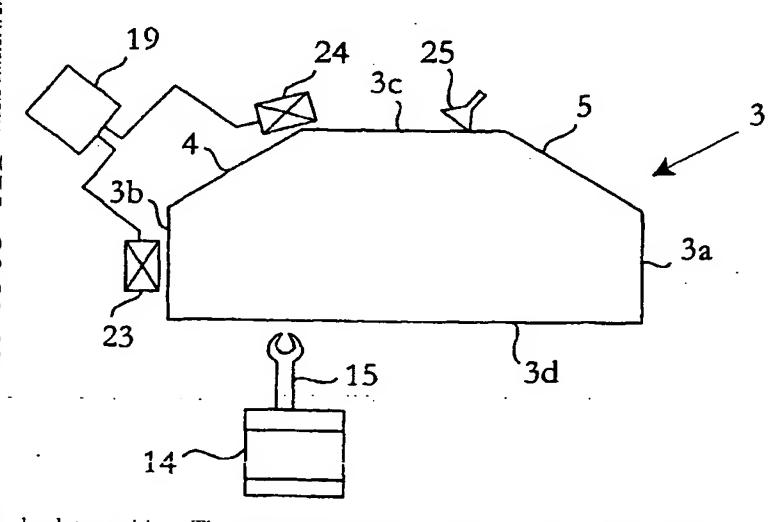
19 January 2006

(15) Information about Correction:

see PCT Gazette No. 03/2006 of 19 January 2006, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ARRANGEMENT AND METHOD FOR DETERMINING POSITIONS OF THE TEATS OF A MILKING ANIMAL



(57) Abstract: An arrangement determining positions of the teats of an animal is provided in a robot-based milking The arrangement comprises a system. camera pair directed towards the teats of the animal for repeatedly recording pairs of images, and an image processing device for repeatedly detecting the teats of the animal and determining their positions by a stereoscopic calculation method based on the recorded pairs of images. The image processing device may be provided to initially determine the absolute position of a teat of the milking animal in a coordinate system of the milking system, and to later determine the position of the teat of the milking animal relative to the robot arm or the teat cup repeatedly, wherein the position of the teat of the milking animal relative to the robot arm or the teat cup is more exact than the

absolute position. The camera pair may be comprised of a pair of thermal or infrared cameras.

O 2005/094565 A1